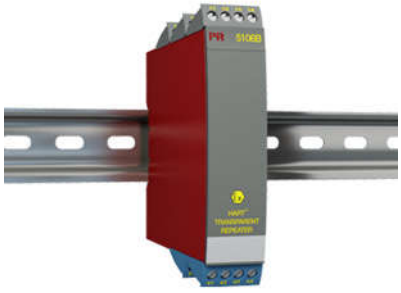
PERFORMANCE MADE SMARTER



HART transparent repeater

5106B

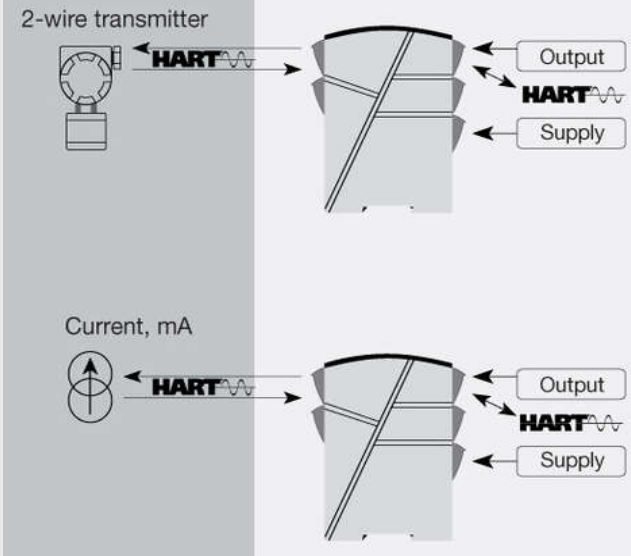
– 3- / 5-port 3.75 kVAC galvanic isolation
– Low response time
– 2-wire supply > 17 V in Ex / I.S. area
– 1- or 2-channel version
– Universal supply by AC or DC

Application
- Power supply and Ex / I.S. safety barrier with 2-way HART communication for 2-wire transmitters installed in the hazardous area.
- Ex / I.S. safety barrier with 2-way HART communication for supplied current transmitters installed in the hazardous area.
- Signal isolator with low response time on analog current signals from the hazardous area.

Technical characteristics
- PR5106B primarily processes current signals of 4...20 mA.
- PR5106B is based on microprocessor technology for gain and offset. The analog signal is transmitted at a response time of less than 25 ms.
- Inputs, outputs, and supply are floating and galvanically separated.
- The output can be connected either as an active current transmitter or as a 2-wire transmitter.

Mounting / installation
- Mounted vertically or horizontally on a DIN rail. As the devices can be mounted without distance between neighboring units, up to 84 channels can be mounted per meter.
- PR5106B is recommended as Ex / I.S. safety barrier for 5335D and 6335D.

Applications



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Order:

Type	Input	Output	Channels
5106B	4...20 mA : B	4...20 mA : 2 20...4 mA : 9	Single : A Double : B

Environmental Conditions

Operating temperature..... -20°C to +60°C
Calibration temperature..... 20...28°C
Relative humidity..... < 95% RH (non-cond.)
Protection degree..... IP20

Mechanical specifications

Dimensions (HxWxD)..... 109 x 23.5 x 130 mm
Weight approx..... 245 g
DIN rail type..... DIN 46277
Wire size..... 1 x 2.5 mm^2 stranded wire
Screw terminal torque..... 0.5 Nm

Common specifications

Supply

Supply voltage, universal..... 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse..... 400 mA SB / 250 VAC
Max. required power..... ≤ 3 W (2 channels)
Internal power dissipation..... ≤ 2 W (2 channels)

Isolation voltage

Isolation voltage, test / working..... 3.75 kVAC / 250 VAC
PELV/SELV..... IEC 61140

Response time

Response time (0...90%, 100...10%)..... < 25 ms

Auxiliary supplies

2-wire supply (pin 44...42 and 54...52)..... 25...17 VDC / 0...20 mA

Signal / noise ratio..... Min. 60 dB (0...100 kHz)
Accuracy..... Better than 0.1% of sel. range
Effect of supply voltage change..... < ±10 µA
EMC immunity influence..... < ±0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst..... < ±1% of span

Input specifications

Current input

Measurement range..... 4...20 mA
Min. measurement range (span)..... 16 mA
Input resistance: Supplied unit..... Nom. 10 Ω
Input resistance: Non-supplied unit..... Rshunt = ∞, Vdrop < 4 V

Output specifications

Current output

Signal range..... 4…20 mA
Min. signal range..... 16 mA
Load (@ current output)..... ≤ 600 Ω
Load stability..... ≤ 0.01% of span / 100 Ω
Current limit..... ≤ 28 mA

Passive 2-wire mA output

Signal range..... 4...20 mA
Max. external 2-wire supply..... 29 VDC
Effect of external 2-wire supply voltage variation..... < 0.005% of span / V

Output ripple..... < 3 mVRMS on HART communication
of span..... = of the presently selected range

Observed authority requirements

EMC..... 2014/30/EU
LVD..... 2014/35/EU
EAC..... TR-CU 020/2011

Approvals

ATEX 2014/34/EU..... DEMKO 00ATEX127483, II (1) G [EEx ia] IIC
UL..... UL 913, UL 508
EAC Ex TR-CU 012/2011..... RU C-DK.GB08.V.00410